ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

April 1, 2005

Mr. Robert Evans
U.S. Nuclear Regulatory Commission
Region IV: DNMS: NMLB
Suite 400
611 Ryan Plaza Drive
Arlington, TX 76011

SUBJECT: ANALYTICAL RESULTS FOR THREE SOIL SAMPLES AND SIX SWIPE SAMPLES COLLECTED MARCH 2-3, 2005 FROM KAISER ALUMINUM, TULSA, OKLAHOMA (INSPECTION REPORT #040-02377/05-02) [RFTA NO. 05-001]

Dear Mr. Evans:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received three soil samples and six swipe samples from Kaiser Aluminum, Tulsa, Oklahoma on March 7, 2005 that were collected March 2-3, 2005. At your request, the soil samples were analyzed as received (wet) for the thorium and uranium series by gamma spectroscopy (GS) (Procedure CP1, Revision 14). The percent moisture (Procedure SP3, Revision 3) was calculated for each of these samples. The GS and percent moisture data are presented in Table 1. The swipe samples were analyzed by gas-flow proportional counting (Procedure CP3, Revision 2). Swipe # NRC-05-02-S5, with an alpha activity of 1.36 ± 0.70 dpm/swipe, was the only smear that had alpha activity above the alpha MDC of 0.89 dpm/swipe.

ESSAP's Quality Control (QC) requirements were met for these analyses. The QC files are available for your review upon request.

Please contact me at (865) 241-3242 or Wade Ivey at (865) 576-9184 with any questions or comments.

Sincerely,

Dale Condra

Dale Condra
Laboratory Manager
Environmental Survey and
Site Assessment Program

RDC/WPI:ar

Enclosure

cc: T. McLaughlin, NRC/NMSS/TWFN 7F27
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File 1654

Distribution approval and concurrence:	**Initials**
Technical Management Team Member	TQV
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ORISE TABLE 1

CONCENTRATIONS OF SELECTED GAMMA EMITTING RADIONUCLIDES AND PERCENT MOISTURE IN SOIL SAMPLES BY GAMMA SPECTROSCOPY CP1, REVISION 14 AND SAMPLE PREPARATION SP3, REVISION 3 KAISER ALUMINUM TULSA, OKLAHOMA

ESSAP Sample ID	NRC Region IV Sample ID	Percent Moisture	Radionuclide Concentrations (pCi/g wet weight)[a]						
			U-238 by Th-234	U235	Total U[b]	Th-230	Th-228 by Pb-212	Th-232 by Ac-228	Total Th[c]
1654S0001	NRC-05-02-01	19.3	1.19 ± 0.76[d]	0.12 ± 0.14	2.5 ± 1.1	-4.7 ± 5.3	1.93 ± 0.15	2.07 ± 0.26	4.00 ± 0.30
1654S0002	NRC-05-02-02	16.9	1.0 ± 1.2	0.17 ± 0.30	2.2 ± 1.7	12 ± 11	7.43 ± 0.54	7.29 ± 0.69	14.72 ± 0.88
1654S0003	NRC-05-02-03	18.6	0.72 ± 0.81	0.08 ± 0.14	1.5 ± 1.2	-2.5 ± 5.4	1.91 ± 0.18	1.74 ± 0.23	3.65 ± 0.29

[a]The average MDCs for these radionuclides range from 0.07 pCi/g for Th-228 by Pb-212 to 10 pCi/g for Th-230.

[b]Total uranium is calculated using the equation (2·U-238) + U-235.

[c]Total thorium is the sum of Th-228 and Th-232.

[d]Uncertainties represent the 95% confidence level, based on total propagated uncertainties.